18 OCT 2004

Joint Lessons Learned: Operation IRAQI FREEDOM

The Army's Current Force Capability Gaps

How OIF/OEF Experience is Shaping the (Near) Future Army

Good News and Bad News….

"…I think there is about a 90 percent agreement with the Services on what happened in this war, there's probably an 80 percent agreement on why it happened and there's probably a 50% agreement on what we should do about it…"

BG Robert W. Cone, Director, Joint Center for Lessons Learned, Joint Forces Command

OIF Joint Lessons Learned—Where they focused

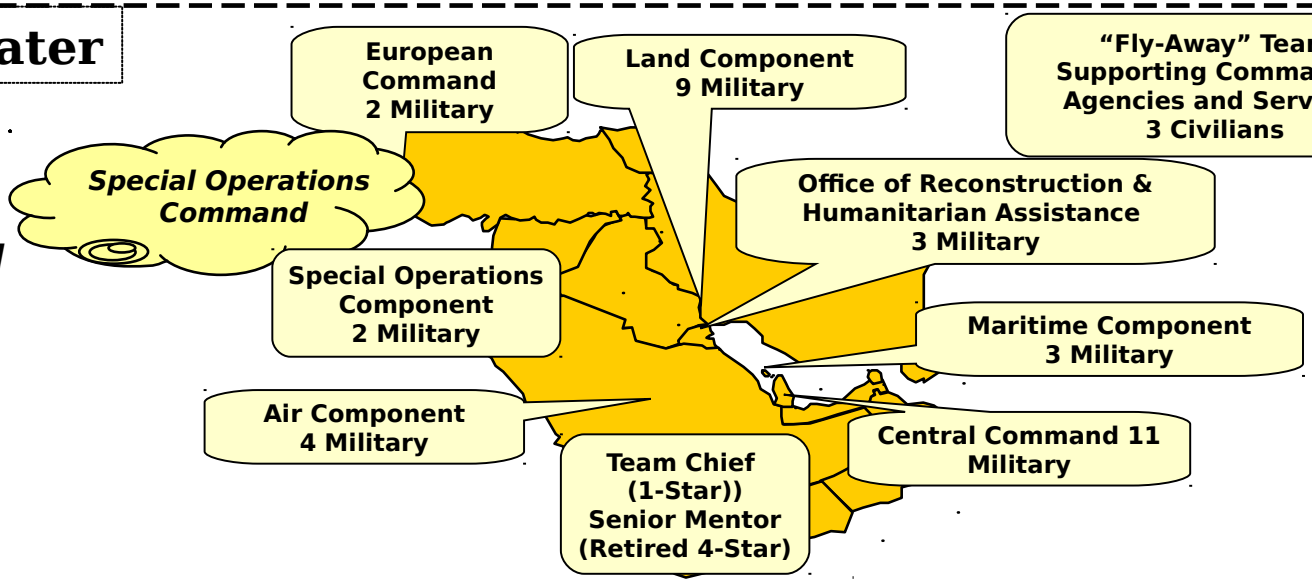
Strategic National

Defense Science Board and Joint Staff J7

Operational -Theater

Joint Forces Command Lessons Learned Teams

Analyst Team Joint Forces Command 18 Civilians


European Command 2 Military
Land Component 9 Military
"Fly-Away" Team Supporting Commands, Agencies and Services 3 Civilians
Special Operations Command
Office of Reconstruction & Humanitarian Assistance 3 Military
Special Operations Component 2 Military
Maritime Component 3 Military
Air Component 4 Military
Central Command 11 Military
Team Chief (1-Star)) Senior Mentor (Retired 4-Star)

Tactical - Operational

Services and Defense Agencies

IRAQI FREEDOM: One Version of War

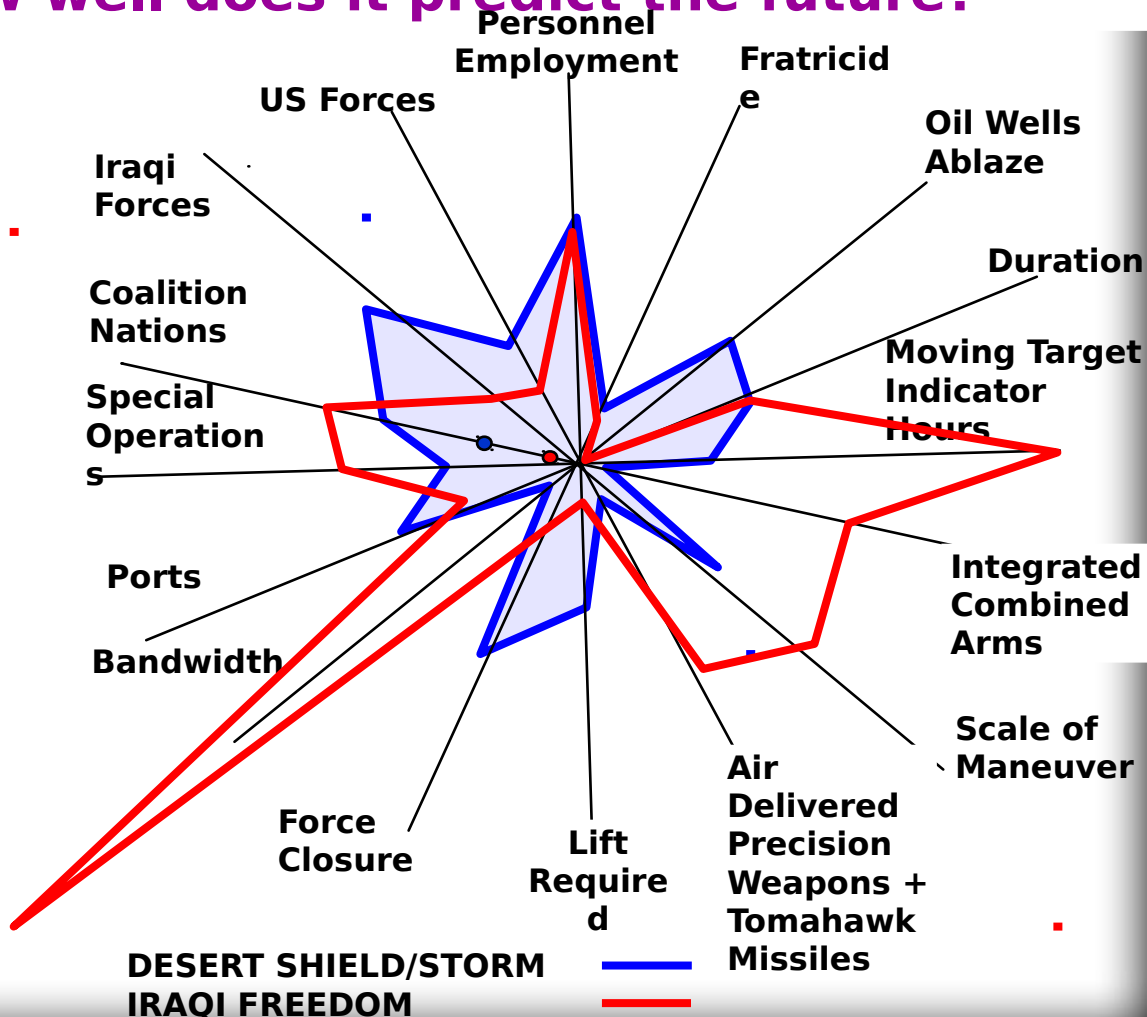
A fundamental consideration: This was a Campaign of significant scope, scale, complexity and risk, and new capabilities, but how well does it predict the future?

Contributing Factors

- **Northern/Southern Watch--12 yr prep**
- **OEF Afghanistan Experience**
- **Existing Joint Headquarters**
- **Existing Command & Control facilities**
- **Land and Sea prepositioned stocks**
- **Lift improvements ($48B)**
- **Greater bandwidth capability**
- **Mission rehearsal exercises**
- **Overmatching Power**
  - Determined time and place of attack
  - Information superiority
  - Rapid Air and Sea supremacy
  - Precision fires; Speed and depth of maneuver

OIF vs Desert Storm

- **Fewer land and air forces**
- **Extensive use of Special Operations**
- **First use of Land Component Commander**
- **Robust Collaborative Planning Effort**
- **Greater maneuver distances**
- **Fewer Iraqi missile launches**
- **Fewer oil wells set ablaze**
- **Fewer munitions used**
- **Reduced costs**



The Big Issues – Quick Look from the Joint View

1. **Capabilities Joint Forces reported as reaching new levels of performance, and need to be sustained and improved**
   - Joint Integration and Adaptive Planning
   - Joint Force Synergy
   - Special Ops and Special Ops -Conventional Integration
2. **Capabilities that demonstrated considerable effectiveness, but need enhancement**
   - Urban Operations
   - Psychological Operations
   - Intelligence, Surveillance, and Reconnaissance
3. **Capabilities that fell short of expectations or needs, and need to be redressed through new initiatives**
   - Battle Damage Assessment
   - Fratricide Prevention
   - Deployment Planning and Execution
   - Reserve Mobilization
   - Coalition Information Sharing
4. **Second-Tier Issues**
   - Joint Fires
   - Time Sensitive Targeting
   - Overmatching Strike
   - Training
   - Theater Logistics
   - Public Affairs/Media Integration
   - Shaping Interagency Involvement
5. **Insights to future concepts**
   - Emerging Battlespace
   - Knowledge Enabled Warfare
   - Effects Based Operations

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A Product of the Army's The Current To Future Task Force

Capability Gaps of our Current Army

Iteration #1: Capability Gap Analysis for the Current and Future Force

The Army's Current Force Gap Analysis Process

Future Operational Risk Assessment

+

Current Operational Needs (ONS & Joint/Army Lessons Learned)

Minus

rrent / Programmed Capabiliti

Solutions Analysis

Residual Gaps

Current Force Capability Gap Areas

1. Network Enabled Battle Command
2. Soldier Protection in Counter-Insurgency Environment
3. Protect the Force in Non-Contiguous Battlespace
4. Logistics in a High OPTEMPO, Non-Contiguous Battlespace
5. Train the Force How and As it Fights
6. Responsive, Networked, Precision Fires
7. Ability to Conduct Joint Urban Operations
8. SOF and Conventional Forces Integration
9. Joint Interoperability
10. Timeliness of Analysis and Information Dissemination

Current Force Capability Gap Areas

1. Network Enabled Battle Command

   - Battle Command Good Enough G-3 ICW ASA(ALT) and G-8 execute fielding.
   - Blue Force Tracking (BFT) to support Independent Team / Convoy Level of CS / CSS Units G-3 ICW ASA(ALT),G-8 and Logistics Task Force execute fielding.
   - Advanced Robotic Controller (Video) REF ICW G-3 equip designated forces. TRADOC, RDECOM and ASA(ALT) coordinate spiral of capability.

2. Soldier Protection in Counter-Insurgency Environment

   - Interceptor Body Armor Improvements (Deltoid and Aux Device) REF ICW G-3 equip designated forces. TRADOC, RDECOM and ASA(ALT) coordinate spiral of capability.
   - Change Detection Work Station and associated airborne sensors REF ICW G-3 equip designated forces. TRADOC, RDECOM and ASA(ALT) coordinate spiral of capability. (TF Modularity enabler for 2006-2008 timeframe)
   - Explosive Resistant Coating REF ICW G-3 equip designated forces. TRADOC, RDECOM and ASA(ALT) coordinate spiral of capability.

CURRENT FORCE CAPABILITY ANALYSIS

Core Capability Gap Area	Sub-Capability Gap Areas	Near Term Rating	Key Attributes	Programmed Solution Set FY04-05	High Priority Current Force Residual Gaps	Candidate Solution Action Pla
•Soldier Protection in Counter-Insurgency Environment	➢Lighter, more effective ballistic protection (composite materials) for Soldier with active and passive protection systems to enhance survivability against KE, directed energy and current and projected enemy lethal effects. ➢Active and passive means of protection for the Soldier ➢Improved situational awareness enabled by networking the Soldier to the rest of the force	R R A	➢Keep Soldiers Mission Capable ➢Where possible remove Soldiers from dangerous situations ➢Superior SA of enemy to preempt or avoid close threats ➢Individual protection from - Small arms fire - Indirect fire fragments - Injuries to neck and extremities - IEDs, mines & booby traps - Harsh climate and terrain - Hearing damage ➢Prevent fratricide –	• Rapid Fielding Initiative (RFI) • Interceptor B ody Armor • Up-armored HMMWV • IED Task Force (Guardian Brigade) • Crew Protectio n Kits • SaaS • Warlock • Blue Force Tracking • Modification to soldier Body Armor (Deltoid and Aux Device)	➢ Limited Individual ballistic protection up to 7.62mm ➢ Poor Protection of Extremities ➢ Limited blast debris protection ➢ Light vehicle RPG / ATGM Defense inadequate ➢ Insufficient Counter Mortar / Sniper capability ➢ Weak IED detection, avoidance, neutralization, and protection ➢ Limited Small Unit pre-emptive protection ➢ Inability to ID CBRNE ➢ Current Hearing	**•D:** TTPs for • IED threat • Glove SOPs • Neck protection • Red Teaming **O:** **T:** • Red Team University • Integrate Lessons Learned into CTC **(S&T):** • CBRNE Nano-solution • Improved Ballistic Protection (Part I) • Advanced Fiber Technology for Improved Ballistic Protection (Part II) • Forward Looking SAR • Harmonic Radars • Directed Energy • Improved Jammers	**M:** • Packbots • Dragon Runner • Boomerang Acoustic Detector • Self-Screening Vehicle Jammer (SSVJ) • Mobile Blocker High Power • Mobile Multi-Band Jammer • Kevlar Blankets • Slat Armor • ARC (Advance Robotic Controller) – leader follower concept • POLARIS • Advanced suite of CBRNE systems • Hearing Protection • Explosive Resistant Coating (“Paint on Armor”) • FBCB2-CDA • CROWS • D-CIMS • Auto Gun Mount **L:** Leader enforcement of TTPs / SOPs **P:**

Interceptor Body Armor (IBA) Improvements

System Description

- Deltoid Auxiliary Body Armor provides fragmentation protection for areas not covered by the standard IBA. The armor is made of Kevlar blanket. The side protection piece attaches to the vest and hangs under the armpit. When the vest is closed, the Kevlar armor is held flush against the body. The second piece attaches to the outside of the armor and covers the shoulder. Since it is made from Kevlar and not plates, the armor does not restrict movement.

Production & Funding:

- G8 Procured 128,000 sets to push to CJTF 7

Status TRL 9

- Prototypes developed; in use in OIF

- Initially proposed by 82d Airborne Soldiers; 2 designs now being evaluated

- 82nd issued 6,000 sets

CURRENT FORCE RESIDUAL GAPS

1. Network Enabled Battle Command to Current Force

- Lack complete Blue Force Tracking, COP, Data Fusion, Timely Flow of Information (small unit lower tactical level)
- Limited Battle Command on the Move (Mounted / dismounted connectivity)
- Poor NLOS Comms in Non-Contiguous Battle space
- Insufficient Joint Data Access
- Limited Encryption of SATCOM network
- Lack Wideband Comms
- Limited 25hrz TACSAT channels
- Insufficient Knowledge Management
- CPs are large, lack mobility and are difficult to protect

2. Soldier Protection in Counter-Insurgency Environment

- Insufficient Counter RAM and Sniper capability
- Weak IED detection, avoidance, neutralization, and protection
- Light vehicle RPG / ATGM Defense inadequate
- Limited blast debris protection
- Poor Protection of Extremities
- Inadequate hearing protection
- Limited Individual ballistic protection up to 7.62mm

CURRENT FORCE RESIDUAL GAPS

3. Protect the Force in Non-Contiguous Battlespace

- CS / CSS units lack robust fighting capabilities and force protection
- Insufficient communications for C2 of convoys, CSS and independent operations
- Limited Tactical Comms to obtain COP and SU to enable COE battle command
- Soldier excessively exposed along LOCs
- Combat ID limited to visual means
- Limited ability to Counter MANPADS Surface to Air Msls
- Little Persistent surveillance
- Limited Small Unit pre-emptive protection
- Inability to ID CBRNE

4. Logistics In A high OPTEMPO, Non-Contiguous Battlespace

- Sustainment system cannot support fast paced operations
- Distribution system not responsive to Warfighter requirement
- Logistics automation cannot support fluid operations
- TPFDD system unable to support fast-paced changes to operational requirements
- Cumbersome Reception, Staging, Onward movement, and Integration (RSOI)
- Limited asset and in transit visibility
- Insufficient Global ITV Comms

CURRENT FORCE RESIDUAL GAPS

5. Train the Force How and as it Fights

- Inadequate Embedded Unit / Equipment Training
- Limited Automated Mission Rehearsal
- Limited training for SOSO tasks
- Limited Joint training at CTC / BTCP
- Institutional training has difficulty reflecting demands of the COE
- Difficulty developing teams of commanders remotely
- Limited TTPs for autonomous platform (UAV / robotics) planning and use
- Limitations in training ammo to support COE
- Limited User friendly training management automation

6. Responsive, Networked, Precision Fires

- Insufficient extended range, responsive, precision lethality against moving targets
- Limited observation, designation, target acquisition target location and comms equipment available to observers to employ joint fires
- Inability to leverage joint fires by targeting process
- Insufficient doctrine for observers, both Joint & Service. Relies heavily on 13F training and USAF GFAC / ETAC availability
- Difficulty achieving effects against bunkers

CURRENT FORCE RESIDUAL GAPS

7. Ability to Conduct Urban Operations

- Limited reliable small unit comms
- Poor mounted / dismounted comms to support coordination
- Limited rapid, precise dismounted fires
- Limited counter sniper capability
- Lack Sense Through Walls capability
- Lack M&S to replicate urban fight
- Limited MOUT training facilities
- Lack of 7.62, .50 cal and organic vehicles for snipers at IN CO level
- Lack protected lethality

8. SOF and Conventional Forces Integration

- Lack common communications equipment
- Limited Joint / SOF training
- Lack Institutional training – CGSC, Adv Course
- Emerging SOF -Conventional Forces Doctrine / TTP
- CA and PSYOPs lack capability to interface with conventional forces
- Limited JTTP Integration and SoS Interoperability of SOF and Conventional Ground Forces
- Limited SOF LNO capability

CURRENT FORCE RESIDUAL GAPS

9. Joint Interoperability

- Limited communications interoperability
- ~~Lack effective cross Service BFT ID~~
- Limited Joint training at CTC/BTCP
- Limited ability to replicate Joint effects at CTC
- Poor tactical means to coordinate with Joint partners

10. Timeliness of Analysis and Information Dissemination

- Current ISR capabilities provide unprecedented ability to observe the enemy, but analysis and dissemination lag operations
- Decision support not enabled by technology
- Lack multi-level security procedures & policies
- Limited ability to perform IPB in urban / complex terrain

Technology to Capability Crosswalk

GAPs \ Comms Related Discrete Capabilities	BFT	Reliable Comms in Urban Environment	Communications Interoperability	C2 Comms for CSS/Convoys	ISR Data Analysis & Dissemination	Mounted/Dismounted Coordination	Target Acquisition & Comms to Employ Joint Fires	NLOS Communications
Battle Command	✓	✓	✓	✓	✓	✓		✓
Soldier Protection	✓	✓				✓		
Protect Force	✓	✓		✓	✓		✓	
Logistics	✓			✓	✓			
Training								
Precision Fires							✓	
Urban Ops	✓	✓				✓		
SOF Integration			✓					
Joint Interoperability	✓		✓				✓	
Information Dissemination		✓	✓	✓	✓	✓		✓

✓	GAP Analysis - Feb 2004
✓	Military Judgment

Technology to Capability Crosswalk

GAPs \ Discrete Capabilities	Decision Support Tools	IED Detection & Avoidance	Counter RAM & Sniper	BCOTM	RPG/ATGM Defense	CS/CSS Force Protection	Precision Lethality at Extended Ranges	Sense Through Walls Capability	Responsive Logistic System	Embedded Unit/Equipment Training/Rehearsal	Joint CTC/BCTP Training
Battle Command	✓			✓							
Soldier Protection		✓	✓		✓						
Protect Force		✓	✓		✓	✓					
Logistics	✓	✓		✓		✓			✓		
Training										✓	✓
Precision Fires							✓				
Urban Ops		✓	✓		✓	✓		✓			
SOF Integration											
Joint Interoperability	✓						✓				
Information Dissemination	✓			✓							

✓	GAP Analysis - Feb 2004
✓	Military Judgment

Questions?

QUESTIONS?

Current Force Capability Gaps

EXTENDED LIST

1. Network Enabled Battle Command
2. Soldier Protection in Counter-Insurgency Environment
3. Protect the Force in Non-Contiguous Battlespace
4. Logistics in a High OPTEMP, Non-Contiguous Battlespace
5. Train the Force How and as it Fights
6. Responsive, Networked, Precision Fires
7. Ability to Conduct Joint Urban Operations
8. SOF and Conventional Forces Integration
9. Joint Interoperability
10. Timeliness of Analysis and Information Dissemination
11. Modularity
12. Reduce Stress on the Force
13. HUMINT Capabilities
14. Non-Lethal Capabilities

Joint Lessons Learned Products

GWOT

Iraqi Perspectives

Post Major Combat Operations Analysis

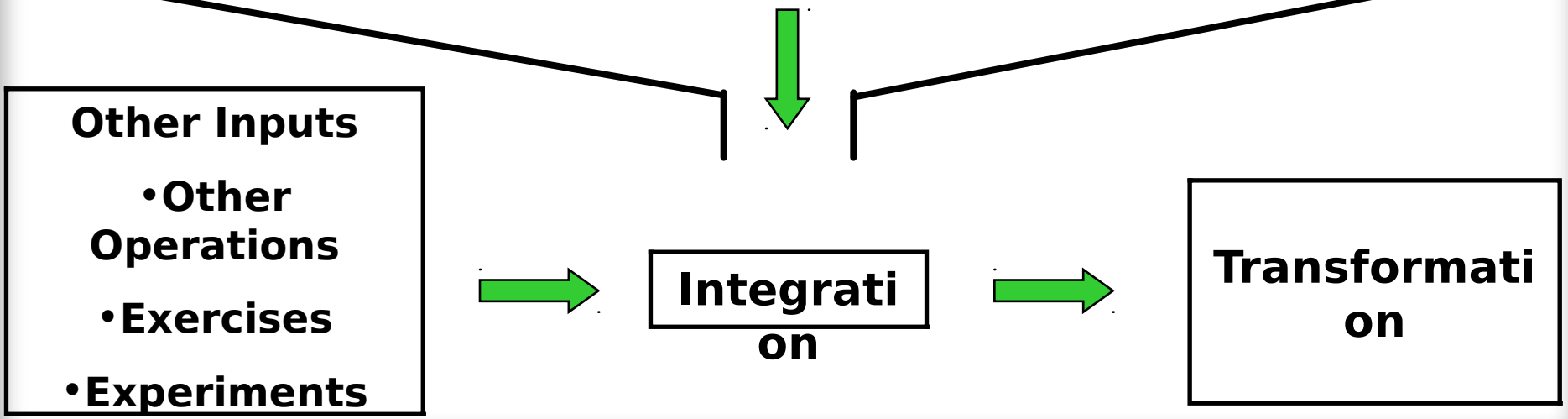
JUN03 NOV03 OCT04

Major Combat Operations Quick Look

Major Combat Operations Report

Haiti

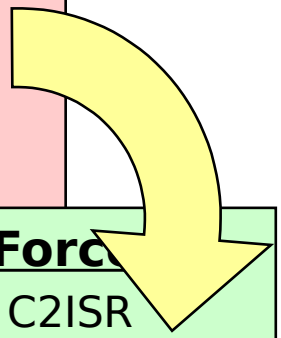
Kosovo



Initial I

Focused Recommendations

- Joint Training and Experience
- Fully joint, interoperable C2 and C2I networks
- Established Joint C2 Organizations
- High resolution live/virtual Joint & Multinational training capability
- SOF-Conventional Force Integration
- Blue Situational Awareness & Combat ID
- Transparent Joint Fires System
- Overmatching lethality & survivability
- Joint Experimentation



Elements of a Transformed Forc

- Increasingly capable networked C2 and C2ISR
- More, smaller, increasingly lethal, survivable formations
- Precision weapons and precision ISR
- Smaller footprints with rapid follow-on force
- “Pressure” from all elements of national power (DIME)
- Mutually supporting lethal and non-lethal fires
- Collaborative and Virtual Information Environments
- Simultaneous operations

Special Operations Integration

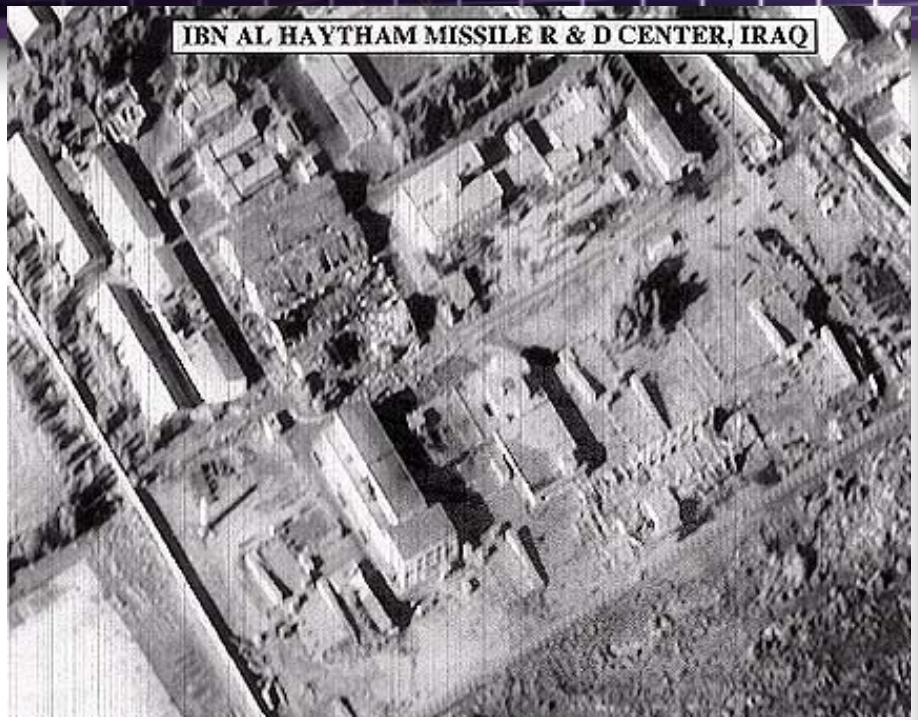
- **Finding: Coherent, willing, interdependent use of Special Operations Forces and their integration with other agencies and conventional forces enabled s**

- **Why it happened:**
  - –High priority Special Operations responsibilities
  - –Novel command relationships
  - –Leadership fully supported integration
  - –Conventional forces leveraged Special Operations forces and [illegible]
- **What should be done:**
  - –Continue to enhance Special Operations-conventional integration thru training and doctrine
  - –Improve Special Operations Command and Control structure and interoperability
  - –Continue Special Operations integration as a force multiplier

Battle Damage Assessment

- **Finding:** BDA did not keep up with the speed of operations and failed to adequately inform operational decisions.

- **Why it happened:**
  - Use of precision weapons to shape combat efforts drives increased needs
  - Lack of realistic training and untested federation that included automation and integration
  - Difficulty in assessing complex systems
  - Effects often achieved, but unknown to decision makers in a timely fashion.



- **What should be done:**
  - Automate the BDA process where possible.
  - Fuse DOD-wide organizational structure, doctrine and processes.
  - Develop self assessing weapons and probability assessments for PGMs
  - Conduct routine training of federated producers/users

Coalition Information Sharing

- **Finding:** Despite emerging technological solutions, integration of coalition partners into planning and execution was hindered by information and applications located on US-only systems.

- **Why it happened:**
  - Key planning occurred on US-Only systems
  - SIPRNET is US-Only; not designed for coalition operations
  - Information release was by exception
  - Current policies prevent a single information sharing solution
  - Multiple networks for coalition partners

- **What should be done:**
  - Affect technology and policy changes that account for the routine nature of coalition operations
  - Develop policies, techniques and procedures to allow allies to assess all mission-essential data based on security clearance and need to know

Emerging Battlespace

- **Finding: A more powerful individual soldier, enabled by knowledge and a previously unimagined control of firepower, fought intense, small scale actions that influenced and, at the same time, were constrained by political, social, economic, information, and infrastructure objectives.**

- **Why it happened:**
  - –Greater military-interagency integration
  - –Flexible mix of forces and capabilities
  - –Mixed battlefield of conventional and unconventional threats
  - –US shaping of Iraq
  - –Constraints of national policy
  - –Global War on Terrorism
  - –Precision, speed, audacity
  - –Advances in technology
- **What should be done:**
  - –Conduct experimentation to integrate mature concepts, capabilities processes
  - –Develop robust live and simulated Joint & Multinational training capability Sustain overmatching lethality & survivability
  - –Develop a fully joint, interoperable Command and Control network